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June 13, 1997

BY HAND DELIVERY

Mr. William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, N.W., Stop Code - 1170
Washington, D.C. 20554

Re: Petition for Reconsideration filed by Westwind Communications, L.L.C.
Sixth Report and Order; FCC 97-115; MM Docket No. 87-268

Dear Mr. Caton:

Transmitted herewith, on behalf of Westwind Communications, L.L.C., licensee of Television Station KBAK(TV), Bakersfield, California, are a facsimile of an original and eleven copies of a Petition for Reconsideration to be filed in the above-referenced matter.

If any questions should arise during the course of your consideration of this matter, it is respectfully requested that you communicate with this office.

Very truly yours,

BROOKS, PIERCE, McLENDON,
HUMPHREY & LEONARD, L.L.P.

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List ABCDE

Mark J. Prak
Counsel to Westwind Communications, L.L.C.

MJP:rb

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Advanced Television Systems	)	
and Their Impact upon the	)	MM Docket No. 87-268
Existing Television Broadcast	)	
Service	)	

To: The Commission

PETITION FOR PARTIAL RECONSIDERATION
OF THE SIXTH REPORT AND ORDER
SUBMITTED BY WESTWIND COMMUNICATIONS, L.L.C.

This Petition for Partial Reconsideration of the Commission's *Sixth Report and Order* in MM Docket No. 87-268, FCC 97-115 (released April 21, 1997) ("*Sixth R&O*" or "*Allotment Order*") is submitted on behalf of Westwind Communications, L.L.C. ("Westwind"), licensee of KBAK-TV, Channel 29, Bakersfield, California.

In the *Sixth R&O*, the Commission allotted DTV Channel 33 as the paired DTV Channel for NTSC 29. Westwind respectfully requests the Commission to reconsider its decision to restrict power output on DTV Channel 33 to 67.1 kilowatts since an increase of power to 68.1 kilowatts would not cause any additional interference to surrounding NTSC and DTV broadcast operations. Alternatively, Westwind requests that the Commission allot a different DTV channel if such channel proves superior to DTV Channel 33. In support, thereof, it is shown as follows.

The Commission's DTV assignment methodology assumes a directional antenna pattern, without regard to whether the NTSC signal is directional and without regard to the azimuth pattern

limits of the licensee's NTSC signal. Thus, a nondirectional antenna may not be usable at the full power authorized by the Commission, and the FCC's assumed DTV pattern may differ from the NTSC pattern producing a disparity in the FCC's determination of maximum service area and the maximum service area possible. Because of this disparity, many stations will be unable to operate at the authorized power without causing interference to other NTSC or DTV operations.

In the case of KBAK-TV, a directional DTV antenna that meets the presently authorized NTSC azimuth pattern limits, instead of the assumed FCC replication pattern, could be operated at a higher power without any additional interference. (See attached engineering analysis conducted by Hammett & Edison, Inc.) According to the engineering analysis, it would be possible to operate at 68.1 kilowatts, as opposed to the FCC authorized 67.1 kilowatts, if KBAK employs a directional antenna that replicates its current NTSC azimuth pattern limits.

Thus, the Commission can better achieve its goals of replication and maximization of signal coverage area. Accordingly, Westwind urges the Commission to allow DTV broadcasters to operate at higher power to maximize coverage when doing so causes no additional interference and when the DTV signal replicates the existing NTSC pattern. Alternatively, Westwind requests that the Commission consider allotting a different DTV channel, if such channel proves superior to Channel 33. Westwind is unable to recommend an alternate channel because the Commission has yet to release its methodology for determining interference in OET Bulletin No. 69.

Respectfully submitted, this the 13th day of June, 1997.

WESTWIND COMMUNICATIONS, L.L.C.

By: _____

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BY FACSIMILE 805/327-5603

June 2, 1997

Mr. Wayne Lansche
President & General Manager
Station KBAK-TV
P. O. Box 2929
Bakersfield, California 93303

Dear Wayne:

As we are sure you are aware, the Federal Communications Commission released on April 21 its Sixth Report and Order to Mass Media Docket No. 87-268, establishing a final Table of Allocations for the transition from analog NTSC television service to a digital television service (DTV). Since TV Station KBAK-TV is one of our retainer client stations, we have performed an analysis of your DTV assignment to evaluate potential interference problems, as well as possible maximization potential, if applicable. The DTV channel assigned to KBAK-TV is 33, at a power of 67.1 kilowatts. While the FCC has established a spacing table for DTV assignments (Rules Section 73.623(d)), it is noted that many of the DTV assignments made by the FCC do not meet these spacings, and KBAK-TV falls into this category. A summary of the limiting allocation conditions is shown in the table at the top of attached Figure 1.

In developing its allotments, the FCC utilized a fairly complex set of computer algorithms to evaluate potential interference, including the use of Longley-Rice terrain sensitive propagation modeling and assumed directional receiving antenna patterns. These algorithms were used by the FCC to locate DTV allotment channels that could be employed at minimal interference impact to desired DTV coverage area and population and to the coverage areas and populations contained within the coverage areas of surrounding NTSC and DTV stations that do not meet the FCC spacing table requirements. Hammett & Edison has developed a DTV/NTSC facility analysis program that implements the new FCC study methodology, and that program has been used to study the maximization potential of KBAK-TV operating on DTV Channel 33. A summary of some of the FCC study requirements and the capabilities of the Hammett & Edison program are detailed in the enclosed paper, "DTV.IXSTUDY™ Analysis Methodology."

As described in that paper, one important allotment factor that many stations may not be aware of relates to the FCC's use of an assumed *directional transmitting antenna for all DTV facilities*. This means that, even if the associated NTSC transmitting facility

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presently utilizes a nondirectional transmitting antenna, a nondirectional antenna may *not* be usable at the full power assigned by the FCC for a particular DTV allotment. The KBAK-TV "DTV replication pattern," as it is known, is shown as a dashed line on attached Figure 2, along with the presently authorized NTSC azimuth pattern shown as a solid line. For KBAK-TV, we calculate that 68.1 kilowatts may be used for a DTV facility that uses an antenna meeting your present NTSC azimuth pattern limits, in lieu of the FCC replication pattern, producing no new interference.* All of these power figures assume that the presently authorized NTSC antenna mounting position would be used for the DTV antenna. However, in most cases, the development of a new directional antenna pattern, specifically for use with the DTV facility, may result in the ability to use much greater power than that assigned by the FCC and, therefore, to maximize population covered. Hammett & Edison has developed the capability to maximize DTV antenna pattern designs, and we would be pleased to discuss that with you, as based on the more likely DTV transmitting antenna mounting position.

We also studied the impact of other assigned DTV stations on your present NTSC facilities. In formulating its allotment table, the FCC did assign many DTV stations to channels that would be short-spaced to NTSC facilities but that have relatively small predicted interference areas within the NTSC station's predicted Grade B contour. However, we show that the KBAK-TV NTSC facility will remain fully-spaced to all added DTV allotments, so one would expect no degradation of the KBAK-TV NTSC signal as a result of newly-constructed DTV facilities.

As always, we appreciate the opportunity to be of service. Please let us know if you would like more information about any aspect of your DTV assignment, or if we can provide further assistance to your DTV implementation planning process.

Sincerely,

Stanley Salek

sm

Enclosures

cc: Mr. Phil Dunton - BY FACSIMILE 805/327-5603
Richard R. Zaragoza, Esq. - BY FACSIMILE 202/296-6518

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* These projected power levels are based on the present implementation of the FCC study algorithms and so are subject to change as the FCC documents its specific analysis methods in the upcoming OET-69 document.

Station KBAK-TV • NTSC Channel 29, DTV Channel 33 • Bakersfield, California

DTV/NTSC Allocation Conditions

A. Spacings not met from assigned DTV Channel to DTV/NTSC facilities

Call	Channel	Location	Short/Long*	Distance	Required
KMPH	N26	Visalia, CA	Short	95.2 km	>96.6 km
KADE	N33	San Luis Obispo, CA	Short	187.9	>244.6

B. Spacings not met from existing NTSC to allotted DTV facilities

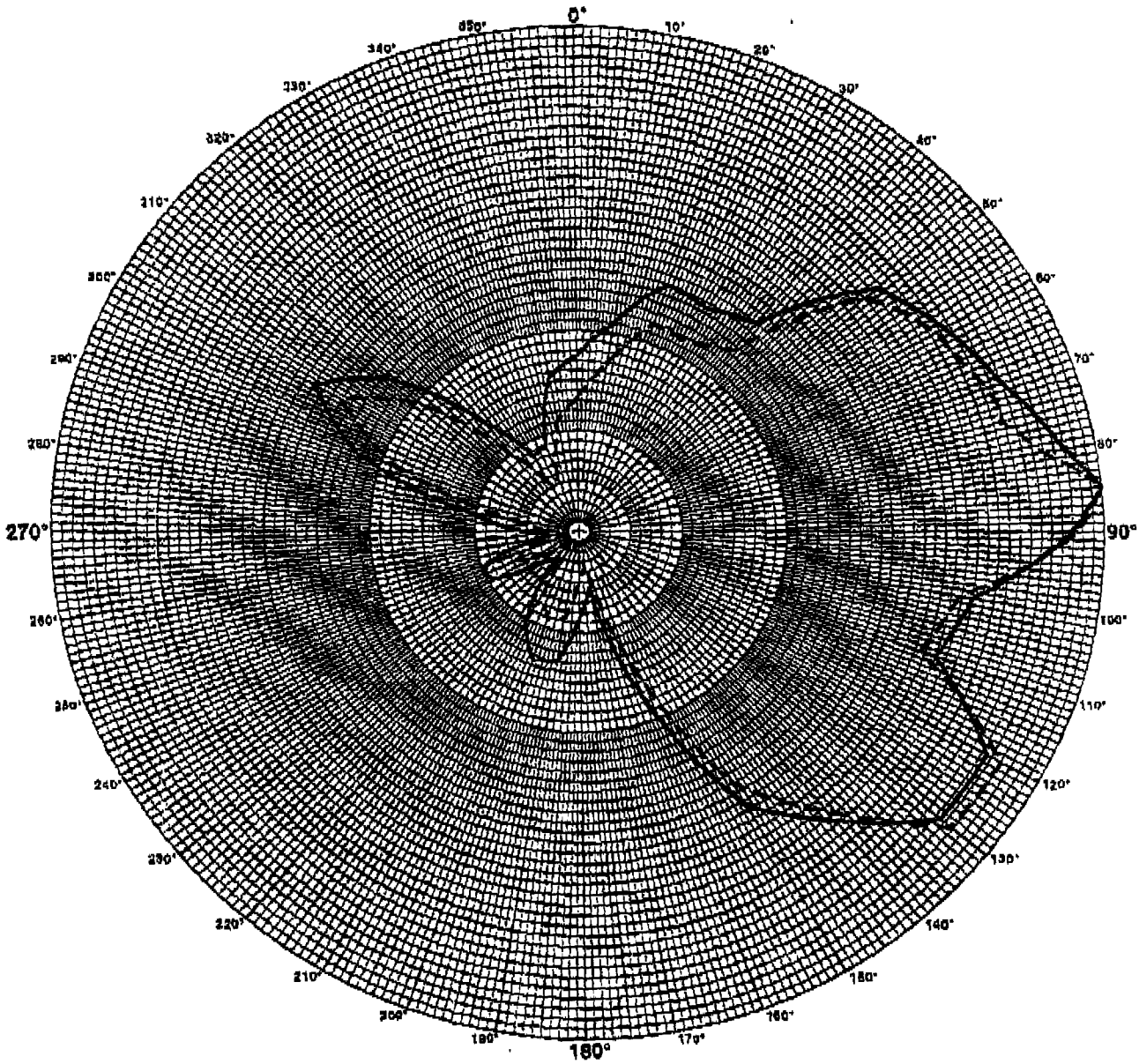
Call	Channel	Location	Short/Long*	Distance	Required

all spacings met from existing NTSC to alloted DTV facilities

* On certain channels, DTV spacings should be either *shorter* than a certain distance or *longer* than a certain distance; that is, spacing requirements are preclusion "doughnuts" rather than preclusion circles. Where the short-spacing is closer to violating the inner "hole" distance rather than the outer distance, we refer to the short-spacing as being too "long."

Station KBAK-TV • NTSC Channel 29, DTV Channel 33 • Bakersfield, California

Comparison of Existing NTSC and FCC-Derived DTV Replication Antenna Azimuth Patterns



Existing NTSC azimuth pattern (from FCC database)
Derived FCC replication azimuth pattern

DTV.IXSTUDY™ Analysis Methodology

Implementation of FCC's Interference-Based Allocation Algorithm

On April 21, 1997, the Federal Communications Commission released its Sixth Report and Order to Mass Media Docket No. 87-268, establishing a final Table of Allotments for the transition from analog NTSC television service to a digital television ("DTV") service. The Commission utilized a complex set of computerized analysis tools to generate the DTV allotment table and added FCC Rules Section 73.623(b)(2), requiring that similar tools be employed to analyze individual DTV station assignments with regard to their potential interference to other DTV stations, DTV allotments, and existing or authorized NTSC facilities. Hammett & Edison has developed computer software to perform this function, based on an examination of the FCC software source code.

For any given NTSC or DTV station to be studied, the FCC analysis model first determines the location of the conventional F(50,50) Grade B contour of the NTSC station, or of the NTSC station associated with an assigned DTV station, using pattern information contained in the FCC engineering database and an assumed antenna elevation pattern. The model assumes that contour as an envelope, outside of which no protection from interference is implied or afforded. The location of the Grade B contour is also used to determine the assigned power for the DTV station, once again using conventional methods found in FCC Rules Section 73.699, Figures 9 and 10, but determining the power necessary on a radial basis to generate the associated DTV coverage contour (41 dBu for UHF, 36 dBu for high VHF Channels 7–13, and 28 dBu for low VHF Channels 2–6), for the assigned DTV channel. The maximum power determined using this method was assigned as the DTV operating power, provided it was calculated to be above established minimum power levels; otherwise, a minimum power level was assigned. Note that the use of this method usually creates a directional antenna pattern, even for DTV assignments to presently omnidirectional NTSC TV stations. The FCC requires that a DTV facility employ an antenna design that meets the calculated pattern, or that a nondirectional antenna be employed that does not exceed the directional pattern envelope in any direction, unless the creation of no new interference can be demonstrated.

In addition to the use of the Grade B envelope and an assumed directional transmitting antenna for all DTV facilities, the model assumes the use of directional receiving antennas at each studied location, or "cell." The characteristics of the receiving antennas are different not only for the low VHF, high VHF, and UHF frequency bands, but also for NTSC and DTV receiving situations, where, based on the FCC model, more directive antennas are employed for analysis of DTV reception.

The FCC analysis technique employs terrain-sensitive calculation methods based on Version 1.2.2 of the ITS Irregular Terrain Model, also known as the Longley-Rice model. For each NTSC or DTV station to be studied, a grid of cells, two kilometers on a side, fills the associated Grade B contour. The program first determines which of the cells is predicted to receive service from the associated station, using Longley-Rice with F(50,50) statistical weighting for NTSC stations and F(50,90) statistical weighting for DTV stations. Cells determined to have no service are not studied for interference from other stations.* Once cells having service are determined, the software analyzes potential interference from other NTSC or DTV stations, again using the Longley-Rice propagation algorithm and F(50,10) statistical weighting for all potential interfering signals. Each cell is evaluated using the desired-to-undesired ratios presented in FCC Rules Section 73.623 for each channel relationship, and cells determined to have interference are flagged and summed with the study results of other cells, resulting in the generation of total interference area figures and tabulations of total population contained within the summed cells.

The Hammett & Edison analysis software program employs all of the analysis features described above, as well as several other more subtle elements employed in the FCC allotment program. Additionally, the Hammett & Edison program provides a graphical element that allows the identification of all interference cells on a map with an associated tabulation, and the program generates a DTV antenna pattern envelope that shows areas that can be maximized without creating interference in any cells that were not already receiving interference. The program can be used to test implementation scenarios that involve changes to antenna height, antenna pattern, channel number, and transmitter location. Additionally, the program has the capability to determine coverage areas of DTV and NTSC stations, with interference cells omitted. The Hammett & Edison program can also identify cells that fall in major bodies of water, based on digitized map data, summarizing those cells separately in an interference study or excluding them from a coverage study. Arguably, cells in water do not require protection from interference.

* It is noted that the Longley-Rice model is not always capable of determining, within certain confidence limits, whether a particular block has service. In such cases, the Longley-Rice algorithm returns an error code; the FCC method for handling such error codes is to assume the associated cells have interference-free service, and as such, are not considered further. This assumption is presently being scrutinized by Hammett & Edison to determine its validity and to identify possible situations where significant actual interference areas may be overlooked from station studies.